

In the Claims:

1. (Currently Amended) A method of associating look-up table addresses with ~~MAC media access control (MAC)~~ addresses, the method including for successive MAC addresses A_0 :
using A_0 to generate $y+1$ look-up table addresses $H_0, H_1, H_2, \dots, H_y$, where y is an integer greater than or equal to one, wherein each of the addresses H_1, H_2, \dots, H_y is obtained from the address A_0 by first forming a respective string A_0 having the same number of bits as A_0 , and then applying the algorithm by which H_0 is obtained from A_0 ; and
according to at least one criterion associating the address A_0 with a selected one of the addresses $H_0, H_1, H_2, \dots, H_y$.
2. (Original) A method according to claim 1 wherein the criterion is that A_0 is associated with H_n where n is the smallest integer in the range 0 to y such that there is presently no MAC address associated with the address H_n .
3. (Original) A method according to claim 1 wherein the criterion is that A_0 is associated with H_n where n is the smallest integer in the range 0 to y such that the number of MAC addresses associated with the address H_n is less than a predetermined integer.
4. (Currently Amended) A method according to claim 1, ~~claim 2 or claim 3~~ wherein the addresses H_1 to H_y are generated successively upon it being found that the preceding H_n does not meet a criterion.

5. (Original) A method according to claim 4 wherein the value of y is predetermined, whereby the maximum number of addresses $H_0, H_1, H_2, \dots, H_y$ which are generated is no more than a predetermined number, even if none of these addresses meets the criterion.

6. (Canceled)

7. (Currently Amended) A method according to ~~claim 6~~ claim 1 wherein each A_n is obtained by modulating a string S_n obtained by a selection from A_0 with a respective set of Walsh codes.

8. (Currently Amended) A switch including a memory for defining a look-up table having a plurality of addresses and a processor for associating MAC addresses with addresses of the look-up table, the processor being arranged to use each MAC address A_0 to generate $y+1$ look-up table addresses $H_0, H_1, H_2, \dots, H_y$ for y an integer greater than or equal to one, wherein each of the addresses H_1, H_2, \dots, H_y is obtained from the address A_0 by first forming a respective string A_n having the same number of bits as A_0 , and then applying the algorithm by which H_0 is obtained from A_0 , and according to at least one criterion to associate the address A_0 with a selected one of the addresses $H_0, H_1, H_2, \dots, H_y$.

9. (New) A method according to claim 2 wherein the addresses H_1 to H_y are generated successively upon it being found that the preceding H_n does not meet a criterion.

10. (New) A method according to claim 8 wherein the addresses H_1 to H_y are generated successively upon it being found that the preceding H_n does not meet a criterion.

11. (New) A method according to claim 3 wherein the addresses H_1 to H_y are generated successively upon it being found that the preceding H_n does not meet a criterion.

12. (New) A method according to claim 10 wherein the addresses H_1 to H_y are generated successively upon it being found that the preceding H_n does not meet a criterion.

13. (New) A method of associating look-up table addresses with media access control (MAC) addresses, the method comprising:

receiving a MAC address;

generating a first look-up table address based upon the MAC address, the first look-up address being generated using an algorithm;

determining whether the first look-up table address is occupied; and

if the first look-up table address is occupied, generating a second look-up table address by forming a string having the same number of bits as the MAC address and applying the algorithm to the string.

13. (New) The method of claim 12 and further comprising:

determining whether the second look-up table address is occupied; and

if the second look-up table address is occupied, generating a third look-up table address

by forming a second string having the same number of bits as the MAC address and applying the algorithm to the string.

14. (New) The method of claim 13 and further comprising:
determining whether the third look-up table address is occupied; and
if the third look-up table address is occupied, generating a fourth look-up table address by forming a third string having the same number of bits as the MAC address and applying the algorithm to the string.

15. (New) The method of claim 12 wherein determining whether the first look-up table address is occupied comprises determining whether any other MAC address is associated with the first look-up table address such that only one MAC address is associated with any given look-up table address.

16. (New) The method of claim 12 wherein determining whether the first look-up table address is occupied comprises determining whether fewer than n MAC addresses associated with the first look-up table address such that the number of MAC addresses associated with the first look-up table address is less than n , wherein n is an integer greater than one.

17. (New) The method of claim 12 wherein generating a second look-up table address comprises modulating the string with a Walsh code.

18. (New) The method of claim 12 wherein generating a first look-up table address comprises hashing the MAC address with a Cyclic Redundancy Code (CRC).

19. (New) The method of claim 12 and further comprising, if the first look-up table address is not occupied, associating the MAC address with the first look-up table address.

20. (New) The method of claim 19 wherein the step of generating a second look-up table address is not performed if the first look-up table address is not occupied.

21. (New) The method of extracting information related to a media access control (MAC) address, the method comprising:

- receiving a MAC address;
- generating a first look-up table address by applying an algorithm to the MAC address;
- determining whether the first look-up table address is associated with the MAC address;
- if the first look-up table address is associated with the MAC address, extracting information related to the MAC address from a look-up table using the first look-up table address;
- if the first look-up table address is not associated with the MAC address, generating a second look-up table address by forming a string having the same number of bits as the MAC address and applying the algorithm to the string;
- determining whether the second look-up table address is associated with the MAC address; and
- if the second look-up table address is associated with the MAC address, extracting

information related to the MAC address from the look-up table using the second look-up table address.

22. (New) The method of claim 21 wherein determining whether the first look-up table address is associated with the MAC address comprises examining correspondence data at the first look-up table address in the look-up table.